Day 4. 7/5 Monday

Multi-step equations

Solve each equation.

1) $11 = 1 + 6x + 4x$

2) $8p + 3p = -11$

3) $-8(1 + 8n) = -200$

4) $-4(7m + 2) = 160$

5) $6 - 8r = -8r - 6(6r - 7)$

6) $8(5 - 5x) = -x - 38$

7) $-5(4 - 3b) - 2(6b + 5) = -45$

8) $-52 = -8(4 + 7n) - 4(5 + 5n)$

9) $-4(-2v + 8) + 5v = -(v + 1) - 3$

10) $-4(x + 4) + 7 = -5(x + 1)$

Homework due 7/6

Solve each equation, if possible. If there is no solution, write "no solution"; if it is the identity situation, write "all real numbers".

1) $7m - 7 - 6m - 16 = 1 + 4m$

2) $3 + 4n + n = 2n + 15$

3) $11 + 2p = p + 4$

4) $-7k - 4k = 8 - 2k - 8k$

5) $-5 + 5(n - 7) = -40 + 5n$

6) $8k - 6 = 6(k + 3) + 6k$

7) $6x + 1 = -6(1 - x)$

8) $-8(1 + 4p) + 7p = -25 - 8p$

9) $4(3r + 4) = -8(2r + 5)$

10) $2(-6m - 3) = 6(5m - 1)$

11) $\frac{19}{4} - 3\frac{1}{2}a = -\frac{1}{4}a + \frac{3}{2}$

12) $\frac{61}{28} + a = \frac{19}{4}a - \frac{11}{7}$

Factoring out the common term

Factor the common factor out of each expression.

1) $16p^4 + 4p^3$

2) $9x + 36$

3) $63 + 45b$

4) $6n^3 - 3n^5$

5) $-6r^5 - 6r^4$

6) $63x^{12} - 35x^6$

7) $14a + 21a^2 + 21a^3$

8) $10n^3 - 9n^2 + n$

9) $-28v^2 - 8v - 36$

10) $-8x^7 + 24x^6 + 12x^5$

11) $20 - 35n^2 - 20n^3$

12) $9x^6 - 63x^3 - 90x^2$

13) $-3k^3 + 15k^2 - 6k$

14) $50p^3 + 50p^2 - 20$

15) $32n^3 + 28n - 20$

16) $-90x^5 + 100x + 60$

17) $3m^2 + 9m + 27$

18) $12r^2 + 4r - 12$

19) $64 + 40x^2 + 72x$

20) $-18n^2 + 15n - 15$

Polynomial and Factoring out GCF

Factoring with GCF

Date_____

Factor the common factor out of each expression.

1) $8 + 6x^4$

2) $2n - 4$

3) $4n^9 + 12n$

4) $3r + 9$

5) $-12a - 3$

6) $5r + 4r^4$

7) $12n^5 + 16n^3$

8) $-9x^3 - 12x$

9) $5k^2 - 40k + 10$

10) $63m^6 - 49m^5 - 21m$

11) $-60 + 60n^2 + 50n^3$

12) $81r^2 - 36r - 18$

13) $-36n^3 - 12n - 28$

14) $18n^3 - 24n - 21$

15) $63n^3 + 81n + 18$

16) $72x^5 - 72x^3 - 80x^2$

17) $-24a^2b^2 + 36ab - 60a$

18) $-77x^2 - 21y + 49$

Factoring with GCF

Date_____

Factor the common factor out of each expression.

1) $-12b - 16$

2) $-4n^2 + 4n$

3) $-4x^3 - 16x$

4) $n^2 + n$

5) $2b^3 - 3b^2$

6) $5v^6 - 15v^5$

7) $r^4 + r^2$

8) $-12v - 4v^5$

9) $21x^9 + 7x^5 + 49x^3$

10) $10x^7 - 5x^6 + 10x^5$

11) $-6n^2 + 9n - 9$

12) $-14n^5 + 56n^2 + 49$

13) $-20n^5 - 10n^4 + 2n^3$

14) $-20n^6 + 14n^4 - 12n^2$

15) $-25x^8 + 40x^7 + 15x^2$

16) $-42x^5 - 12x^2 - 30x$

17) $18x - 6xy^2 + 10xy^9$

18) $-9a^8b - 5a^5b^3 - 10a^6b$

1) $2(4+3x^4)$
2) $2(n-2)$
3) $4n(n^8+3)$
4) $3(r+3)$
5) $-3(4a+1)$
6) $r(5+4r^3)$
7) $4n^3(3n^2+4)$
8) $-3x(3x^2+4)$
9) $5(k^2-8k+2)$
10) $7m(9m^5-7m^4-3)$
11) $10(-6+6n^2+5n^3)$
12) $9(9r^2-4r-2)$
13) $-4(9n^3+3n+7)$
14) $3(6n^3-8n-7)$
15) $9(7n^3+9n+2)$
16) $8x^2(9x^3-9x-10)$
17) $12a(-2ab^2+3b-5)$
18) $7(-11x^2-3y+7)$

1) $-4(3b+4)$
2) $4n(-n+1)$
3) $-4x(x^2+4)$
4) $n(n+1)$
5) $b^2(2b-3)$
6) $5v^5(v-3)$
7) $r^2(r^2+1)$
8) $-4v(3+v^4)$
9) $7x^3(3x^6+x^2+7)$
10) $5x^5(2x^2-x+2)$
11) $3(-2n^2+3n-3)$
12) $7(-2n^5+8n^2+7)$
13) $2n^3(-10n^2-5n+1)$
14) $2n^2(-10n^4+7n^2-6)$
15) $5x^2(-5x^6+8x^5+3)$
16) $-6x(7x^4+2x+5)$
17) $2x(9-3y^2+5y^9)$
18) $-a^5b(9a^3+5b^2+10a)$

Polynomial and Factoring out Homework

Algebra 1 - Polynomials Test (Ch 8)

What is the sum or difference?

____ 1. $2x^8 + 6x^8$

a. $12x^8$ b. $-4x^8$ c. $8x^{16}$ d. $8x^8$

____ 2. $2x^4 - 6x^4$

a. $-4x^8$ b. $8x^4$ c. $-4x^4$ d. $-12x^4$

____ 3. $5y^4 + 3y^4$

a. $2y^4$ b. $15y^4$ c. $8y^4$ d. $8y^8$

____ 4. A biologist studied the populations of white-sided jackrabbits and black-tailed jackrabbits over a 5-year period. The biologist modeled the populations, in thousands, with the following polynomials where x is time, in years.

White-sided jackrabbits: $7.4x^2 - 2.1x + 7.7$
Black-tailed jackrabbits: $7.5x^2 + 5.4x + 3.7$

What polynomial models the total number of white-sided and black-tailed jackrabbits?

a. $14.9x^2 + 3.3x + 11.4$ c. $-14.9x^2 + 3.3x - 11.4$
b. $14.9x^2 - 3.3x - 11.4$ d. $14.9x^2 - 3.3x + 11.4$

Simplify the sum.

____ 5. $(7u^3 + 3u^2 + 5) + (7u^3 - 4u + 3)$

a. $8 - 4u + 3u^2 + 14u^3$ c. $0u^3 + 3u^2 - 4u + 8$
b. $0u^3 - 4u^2 + 3u - 8$ d. $14u^3 + 3u^2 - 4u + 8$

Simplify the difference.

____ 6. $(-7x - 5x^4 + 5) - (-7x^4 - 5 - 9x)$

a. $-14x^4 + 10x + 10$ c. $2x^4 + 2x + 8$
b. $2x^4 + 2x + 10$ d. $-14x^4 - 10x + 10$

____ 7. $(7w^2 - 6w - 6) - (4w^2 + 4w - 2)$

a. $11w^2 + 10w + 4$ c. $3w^2 - 2w - 8$
b. $11w^2 - 2w - 8$ d. $3w^2 - 10w - 4$

Simplify the product.

____ 8. $2n(n^2 + 3n + 4)$

a. $2n^3 + 3n + 4$ c. $n^2 + 5n + 4$
b. $2n^3 + 6n^2 + 8n$ d. $2n^3 + 6n + 8$

____ 9. $5a^2(3a^4 + 3b + 2)$

a. $8a^6 + 15a^2b + 5a^2$
b. $15a^6 + 15a^2b + 10a^2$
c. $15a^8 + 3b + 10a^2$
d. $8a^4 + 8ab + 5a^2$

____ 10. $8p(-3p^2 + 6p - 2)$

a. $-5p^3 + 14p^2 - 6p$
b. $48p^2 - 16p - 24p^3$
c. $14p^2 - 6p - 5p^3$
d. $-24p^3 + 48p^2 - 16p$

Factor the polynomial.

____ 11. $14w^7 + 8w^4$

a. $w^4(14w^3 + 8)$
b. $2(7w^7 + 4w^4)$
c. $2w^3(7w^4 + 4w)$
d. $2w^4(7w^3 + 4)$

____ 12. $54c^3d^4 + 9c^4d^2$

a. $9c^4d^2(6d^2 + 1)$
b. $9c^3d^2(6d^2 + c)$
c. $9c^3d^2(d^2 + 6c)$
d. $9c^4d^2(d^2 + 6)$

Simplify the product using the distributive property or FOIL.

____ 13. $(4h + 7)(2h + 3)$

a. $8h^2 + 2h - 21$
b. $8h^2 - 26h + 21$
c. $8h^2 - 2h - 21$
d. $8h^2 + 26h + 21$

____ 14. $(-5h - 5)(4h - 2)$

a. $-20h^2 - 30h - 10$
b. $-20h^2 + 30h - 10$
c. $-20h^2 - 10h + 10$
d. $-20h^2 + 10h + 10$

____ 15. $(3x - 7)(3x - 5)$

a. $9x^2 - 36x - 35$
b. $9x^2 + 36x + 35$
c. $9x^2 - 36x + 35$
d. $9x^2 + 6x + 35$

____ 16. $(j + 7)(j - 7)$

a. $j^2 - 14j - 49$
b. $j^2 + 14j - 49$
c. $j^2 - 49$
d. $j^2 + 14j - 49$

What is the factored form of the following expressions?

____ 17. $w^2 + 18w + 77$

a. $(w - 7)(w - 11)$
b. $(w + 1)(w + 77)$
c. $(w + 7)(w + 11)$
d. $(w - 7)(w + 11)$

____ 18. $d^2 + 10d + 21$

a. $(d + 7)(d - 3)$
b. $(d - 7)(d + 3)$
c. $(d - 7)(d - 3)$
d. $(d + 7)(d + 3)$

____ 19. $d^2 - 9d + 14$

a. $(d + 2)(d - 7)$
b. $(d - 2)(d - 7)$
c. $(d + 2)(d + 7)$
d. $(d - 2)(d + 7)$

____ 20. $x^2 - x - 42$

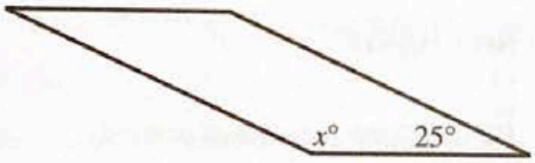
a. $(x + 7)(x - 6)$
b. $(x - 7)(x + 6)$
c. $(x - 7)(x - 6)$
d. $(x + 7)(x + 6)$

____ 21. The area of a rectangular garden is given by the trinomial $x^2 + 2x - 80$. What are the possible dimensions of the rectangle? Use factoring.

a. $x - 10$ and $x - 8$
b. $x + 10$ and $x + 8$
c. $x - 10$ and $x + 8$
d. $x + 10$ and $x - 8$

Homework due 7/6

1. The parallelogram below has consecutive angles with measures $x°$ and $25°$. What is the value of x ?



A. 100
B. 115
C. 130
D. 140
E. 155

2. A retail sales associate's daily commission during 1 week was \$30 on Monday and Tuesday and \$70 on Wednesday, Thursday, and Friday. What was the associate's average daily commission for these 5 days?

F. \$50
G. \$51
H. \$54
J. \$55
K. \$56

3. What is the greatest common factor of 45, 50, and 84 ?

A. 0
B. 1
C. 2
D. 3
E. 5

4. For what value of x is the equation $2(x - 12) + x = 36$ true?

F. 4
G. 8
H. 16
J. 20
K. 30

5. A bag contains exactly 22 solid-colored buttons: 4 red, 6 blue, and 12 white. What is the probability of randomly selecting 1 button that is NOT white?

A. $\frac{5}{11}$
B. $\frac{5}{6}$
C. $\frac{2}{3}$
D. $\frac{1}{22}$
E. $\frac{1}{10}$

6. On a map, $\frac{1}{2}$ inch represents 12 actual miles. Two towns that are 5 inches apart on this map are how many actual miles apart?

F. 120
G. 60
H. 30
J. 24
K. 12

7. Caden had exactly 45 plants to sell. After Day 1 of his sale, he had exactly 42 plants left. After Day 2, Caden had exactly 39 plants left. After Day 3, he has exactly 36 plants left. Assuming Caden will continue to sell plants at that daily rate, how many of these plants will he have left at the end of Day 6 ?

A. 33
B. 27
C. 24
D. 6
E. 3

8. An on-demand movie service charges \$5 per month, plus \$2 for each movie rented. Which of the following equations models the relationship between M, the number of movies rented per month, and T, the total monthly cost, in dollars, for the service?

F. $M = 5 + 2T$
G. $M = 2 + 5T$
H. $T = 5 + 2M$
J. $T = 2 + 5M$
K. $T = (5 + 2)M$

9. What are the solutions to the quadratic equation $(2x + 5)(3x - 4) = 0$?

A. -5 and 4
B. $-\frac{5}{2}$ and $-\frac{4}{3}$
C. $-\frac{5}{2}$ and $\frac{4}{3}$
D. $\frac{5}{2}$ and $-\frac{4}{3}$
E. $\frac{5}{2}$ and $\frac{4}{3}$

10. An 8-inch-by-6-inch rectangle is cut along a diagonal to form 2 triangles. What is the area, in square inches, of each triangle?

F. 7
G. 12
H. 14
J. 24
K. 48

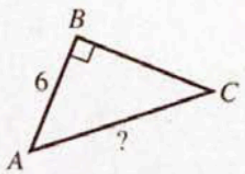
11. In a class of tenth graders, no student participated in more than 1 of the following extracurricular activities: $\frac{2}{3}$ the class played in the band; $\frac{1}{6}$ sang in the chorus; $\frac{1}{10}$ played football; and $\frac{1}{60}$ played basketball. What fraction of the class did not participate in any 1 of these 4 activities?

A. 0
B. $\frac{1}{5,400}$
C. $\frac{1}{20}$
D. $\frac{74}{79}$
E. $\frac{57}{60}$

12. What is the smallest integer greater than $\sqrt{61}$?

F. 4
G. 7
H. 8
J. 10
K. 31

13. In $\triangle ABC$ shown below, $\sin C = \frac{2}{3}$ and the length of $\overline{AB}$ is 6 inches. What is the length, in inches, of $\overline{AC}$?



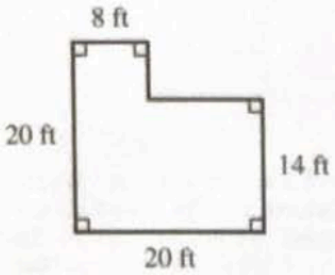
A. $\sqrt{5}$
B. $\sqrt{13}$
C. 4
D. 5
E. 9

14. The table below shows the first 5 terms of an arithmetic sequence. Which of the following is a general expression for the nth term?

Term position (n)	nth term
1	1
2	5
3	9
4	13
5	17

F. $2n - 1$
G. $3n - 2$
H. $4n - 3$
J. $5n - 4$
K. $6n - 5$

15. What is the perimeter, in feet, of the figure shown below?



A. 60
B. 62
C. 70
D. 80
E. 84

16. Manuel estimates that $\frac{2}{3}$ of a pizza is left. Stephen estimates that $\frac{3}{4}$ is left. They are going to compromise for a joint estimate by using the number halfway between their 2 estimates. What is their joint estimate?

F. $\frac{17}{24}$
G. $\frac{5}{12}$
H. $\frac{5}{8}$
J. $\frac{5}{7}$
K. $\frac{1}{2}$

17. So far this basketball season, Sherita made 46 of her first 60 free throws, giving her a free-throw average of about 76.7%. What is the minimum number of free throws she would need to make from now on in order to have a free-throw average of at least 80% ?

A. 2
B. 3
C. 10
D. 14
E. 20

18. Two functions are defined as $f(x) = 2x - 1$ and $g(x) = x^2 + 1$. Which of the following expressions represents $f(g(x))$?

F. $x^2 + 2x$
G. $2x^2 + 1$
H. $2x^2 + 2$
J. $4x^2$
K. $4x^2 - 4x + 2$

19. Data Set A consists of the 8 numbers listed below. Data Set B consists of the 8 numbers in A and a 9th number, which is greater than 90. How will the mean and the median of B compare to the mean and the median of A ?

62, 76, 76, 80, 82, 87, 94, 96

A. The mean and the median of B will each be greater than the mean and the median of A.
B. The mean and the median of B will each be less than the mean and the median of A.
C. The mean and the median of B will each be the same as the mean and the median of A.
D. The mean of B will be the same as the mean of A, and the median of B will be greater than the median of A.
E. The mean of B will be greater than the mean of A, and the median of B will be the same as the median of A.

20. A truck traveling at 35 mph has a leaky radiator that is losing 4 fluid ounces per minute. How many *miles* will the truck travel before the radiator, which held 480 fluid ounces when it began to leak, is empty?

F. 13.7
G. 17.5
H. 35.0
J. 70.0
K. 120.0

21. In the standard (x,y) coordinate plane, what is the midpoint of the line segment that has endpoints $(-5,8)$ and $(3,-1)$?

A. $(-2,-9)$
B. $\left(-1, \frac{7}{2}\right)$
C. $\left(\frac{3}{2}, 1\right)$
D. $\left(4, -\frac{9}{2}\right)$
E. $(8,-9)$

22. The ordered pairs (x,y) in one of the following tables belong to a linear function. Which one?

F.

x	y
0	1
1	0
2	1
3	0

G.

x	y
0	2
1	1
2	1
3	0

H.

x	y
0	3
1	2
2	1
3	0

J.

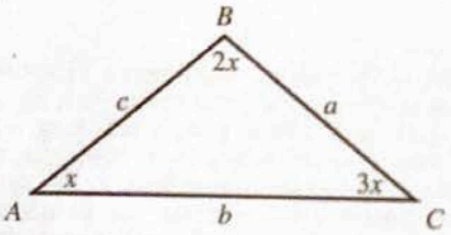
x	y
0	0
1	1
2	0
3	1

K.

x	y
0	0
1	1
2	4
3	9

23. In $\triangle ABC$ shown below, $m\angle A = x°$, $m\angle B = (2x)°$, $m\angle C = (3x)°$, $AB = c$ inches, $AC = b$ inches, and $BC = a$ inches. Which of the following inequalities correctly relates the side lengths of $\triangle ABC$?

(Note: $m\angle A$ denotes the measure of $\angle A$, and AB denotes the length of $\overline{AB}$. The triangle is NOT drawn to scale.)



A. $a < b < c$
B. $a < c < b$
C. $b < a < c$
D. $c < a < b$
E. $c < b < a$

24. What is the slope of the line that passes through (1,5) and (17,7) in the standard (x,y) coordinate plane?

F. $\frac{1}{8}$
G. $\frac{2}{3}$
H. $\frac{3}{2}$
J. $\frac{5}{2}$
K. 8

Test 2: Mathematics—Scoring Key

	Key	Reporting Category PHM N	A	F	G	S
1.	E				—	
2.	H					
3.	B					
4.	J		—			
5.	A					
6.	F					
7.	B					
8.	H		—			
9.	C		—			
10.	J					
11.	C					
12.	H	—				
13.	E				—	
14.	H			—		
15.	D					
16.	F					
17.	C					—
18.	G			—		
19.	A					—
20.	J					
21.	B				—	
22.	H			—		
23.	A					
24.	F			—		

Now, Check the answers. Review the ones that are wrong and prepare question #s to ask in class tomorrow.
Send your answers to virginiasemeducation@gmail.com

Day 4. 7/7 Wednesday

Factoring Quiz

Factor the common factor out of each expression.

1) $9p^3 - 6p$

2) $-20k^7 + 8k^8$

3) $15m^2 + 25$

4) $-5n - 5$

5) $15x^4 + 5x$

6) $2x^5 + 2x^4$

7) $-25x^4 + 5x$

8) $4 + 4v^2$

9) $-16v^2 + 8v + 20$

10) $27n^6 - 6n^5 + 18n^4$

11) $2n^8 + n^5 - 5n^3$

12) $6m^2 - 30m + 54$

13) $56n^6 + 70n^3 + 49n^2$

14) $30x^6 + 18x^4 + 30x^3$

15) $5x^5 - 10x^4 + 10x^2$

16) $-30x^5 - 9x^2 - 24x$

17) $24xy^5 - 80x^3y^2 + 64x^2y$

18) $81b - 90b^2 - 27b^3a^4$

Write each trinomial in factored form (as the product of two binomials).

1) $p^2 + 14p + 48$

2) $n^2 + 10n + 16$

3) $p^2 + 14p + 40$

4) $r^2 + 9r + 18$

5) $p^2 - 8p + 7$

6) $b^2 - 9b + 14$

7) $b^2 - 8b + 15$

8) $m^2 - 16m + 63$

9) $k^2 - 4k - 60$

10) $m^2 + m - 6$

11) $p^2 - 2p - 15$

12) $r^2 + r - 20$

Factor each completely. (Remember to pull out the GCF first.)

13) $3r^2 + 21r + 30$

14) $2p^2 + 14p + 24$

15) $2r^2 - 16r + 30$

16) $3n^2 - 9n + 6$

17) $3b^2 - 3b - 36$

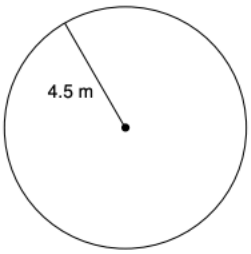
18) $2n^2 + 2n - 12$

Circles

- Circumference =
- Area =

Find the circumference of each circle. Round to the nearest tenth.

1)



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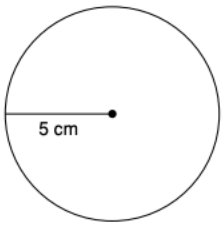

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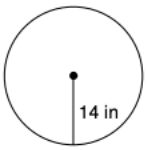
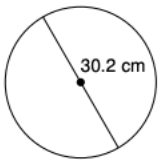


4)



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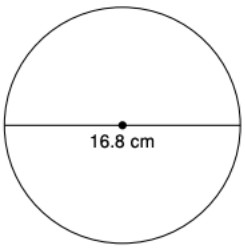

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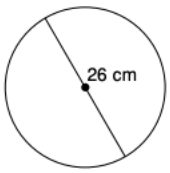
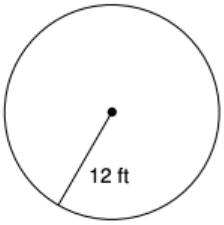


7) radius = 12 yd

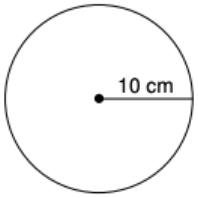
8) radius = 5.5 mi

Find the area of each. Round to the nearest tenth.

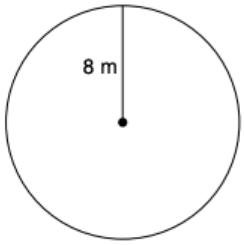
9)



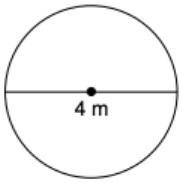
10)



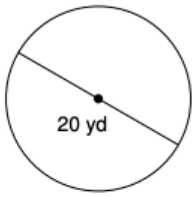
11)



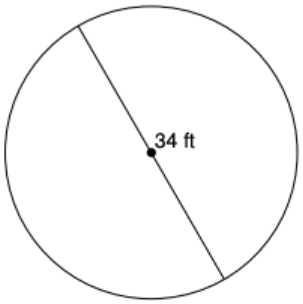
12)



13)



14)



15) radius = 8 ft

16) radius = 5 cm

Find the diameter of each circle.

17) area = 4π in^2

18) area = 49π yd^2

19) circumference = 162π yd

20) circumference = 30π yd

Homework due 7/6

1. Marcus's favorite casserole recipe requires 3 eggs and makes 6 servings. Marcus will modify the recipe by using 5 eggs and increasing all other ingredients in the recipe proportionally. What is the total number of servings the modified recipe will make?

A. 6
B. 8
C. 10
D. 12
E. 15

2. The 35-member History Club is meeting to choose a student government representative. The members decide that the representative, who will be chosen at random, CANNOT be any of the 3 officers of the club. What is the probability that Hiroko, who is a member of the club but NOT an officer, will be chosen?

F. 0
G. $\frac{4}{35}$
H. $\frac{1}{35}$
J. $\frac{1}{3}$
K. $\frac{1}{32}$

3. For what value of x is the equation $2^{2x+7} = 2^{15}$ true?

A. 2
B. 4
C. 11
D. 16
E. 44

4. Let the function f be defined as $f(x) = 5x^2 - 7(4x + 3)$. What is the value of $f(3)$?

F. −18
G. −26
H. −33
J. −60
K. −75

5. A wallet containing 5 five-dollar bills, 7 ten-dollar bills, and 8 twenty-dollar bills is found and returned to its owner. The wallet's owner will reward the finder with 1 bill drawn randomly from the wallet. What is the probability that the bill drawn will be a twenty-dollar bill?

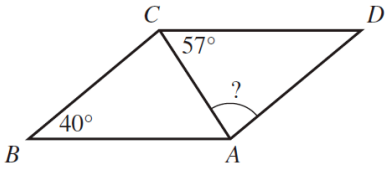
A. $\frac{1}{20}$
B. $\frac{4}{51}$
C. $\frac{1}{8}$
D. $\frac{2}{5}$
E. $\frac{2}{3}$

6. The ABC Book Club charges a $40 monthly fee, plus $2 per book read in that month. The Easy Book Club charges a $35 monthly fee, plus $3 per book read in that month. For each club, how many books must be read in 1 month for the total charges from each club to be equal?

F. 1
G. 4
H. 5
J. 6
K. 75

7. In parallelogram $ABCD$ below, $\overline{AC}$ is a diagonal, the measure of $\angle ABC$ is 40°, and the measure of $\angle ACD$ is 57°. What is the measure of $\angle CAD$?

A. 40°
B. 57°
C. 77°
D. 83°
E. 97°



8. When $x = \frac{1}{2}$, what is the value of $\frac{8x-3}{x}$?

F. $\frac{1}{2}$

G. 2

H. $\frac{5}{2}$

J. 5

K. 10

9. In the standard (x,y) coordinate plane, what is the midpoint of the line segment that has endpoints (3,8) and (1,–4) ?

A. (–2,–12)

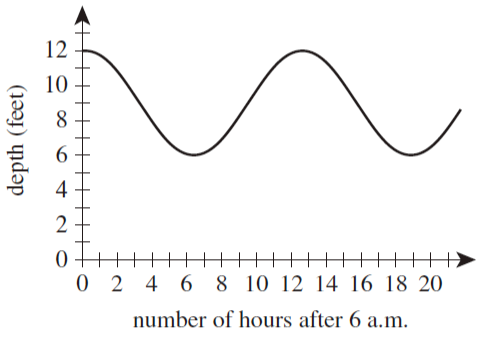
B. (–1, –6)

C. $\left(\frac{11}{2},-\frac{3}{2}\right)$

D. (2, 2)

E. (4,–12)

10. The fluctuation of water depth at a pier is shown in the figure below. One of the following values gives the positive difference, in feet, between the greatest water depth and the least water depth shown in this graph. Which value is it?



F. 3
G. 6
H. 9
J. 12
K. 19

11. What is the slope of the line through (–2,1) and (2,–5) in the standard (x,y) coordinate plane?

A. $\frac{3}{2}$

B. 1

C. –1

D. $-\frac{3}{2}$

E. –4

12. In Cherokee County, the fine for speeding is $17 for each mile per hour the driver is traveling over the posted speed limit. In Cherokee County, Kirk was fined $221 for speeding on a road with a posted speed limit of 30 mph. Kirk was fined for traveling at what speed, in miles per hour?

F. 13
G. 17
H. 43
J. 47
K. 60

13. What is the sum of the solutions of the 2 equations below?

$$8x = 12$$
$$2y + 10 = 22$$

A. $2\frac{2}{5}$

B. $7\frac{1}{2}$

C. 9

D. 10

E. $17\frac{1}{2}$

14. The average of 5 distinct scores has the same value as the median of the 5 scores. The sum of the 5 scores is 420. What is the sum of the 4 scores that are NOT the median?

F. 315
G. 320
H. 336
J. 350
K. 360

15. What is the value of the expression below?

$$\big|\,|-8+4| - |3-9|\,\big|$$

A. –18
B. –2
C. 0
D. 2
E. 18

16. Which of the following expressions is equivalent to $x^{\frac{2}{3}}$?

F. $\frac{x^2}{3}$

G. $\frac{x(2)}{3}$

H. $\sqrt{x^3}$

J. $\sqrt[3]{x}$

K. $\sqrt[3]{x^2}$

17. In the standard (x,y) coordinate plane, what is the slope of the line given by the equation $4x = 7y + 5$?

A. $-\frac{4}{7}$

B. $\frac{4}{7}$

C. $\frac{7}{4}$

D. 4

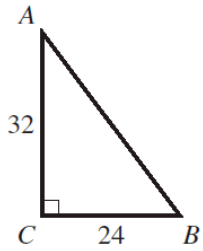
E. 7

18. For which of the following conditions will the sum of integers m and n *always* be an odd integer?

F. m is an odd integer.
G. n is an odd integer.
H. m and n are both odd integers.
J. m and n are both even integers.
K. m is an odd integer and n is an even integer.

19. The lengths of the 2 legs of right triangle $\triangle ABC$ shown below are given in inches. The midpoint of $\overline{AB}$ is how many inches from A ?

A. 16
B. 20
C. 21
D. 28
E. 40



20. In $\triangle DEF$, the length of $\overline{DE}$ is $\sqrt{30}$ inches, and the length of $\overline{EF}$ is 3 inches. If it can be determined, what is the length, in inches, of $\overline{DF}$?

F. 3
G. $\sqrt{30}$
H. $\sqrt{33}$
J. $\sqrt{39}$
K. Cannot be determined from the given information

21. Laura plans to paint the 8-foot-high rectangular walls of her room, and before she buys paint she needs to know the area of the wall surface to be painted. Two walls are 10 feet wide, and the other 2 walls are 15 feet wide. The combined area of the 1 window and the 1 door in her room is 60 square feet. What is the area, in square feet, of the wall surface Laura plans to paint?

A. 200
B. 340
C. 360
D. 390
E. 400

22. The length of a rectangle is 5 inches longer than the width. The perimeter of the rectangle is 40 inches. What is the width of the rectangle, in inches?

F. 7.5
G. 8
H. 15
J. 16
K. 17.5

23. 8% of 60 is $\frac{1}{5}$ of what number?

A. 0.96
B. 12
C. 24
D. 240
E. 3,750

24. Armin is trying to decide whether to buy a season pass to his college basketball team's 20 home games this season. The cost of an individual ticket is $14, and the cost of a season pass is $175. The season pass will admit Armin to any home basketball game at no additional cost. What is the minimum number of home basketball games Armin must attend this season in order for the cost of a season pass to be less than the total cost of buying an individual ticket for each game he attends?

F. 8
G. 9
H. 12
J. 13
K. 20

Test 2: Mathematics—Scoring Key

	Reporting Category*						
	PHM						
Key	N	A	F	G	S	IES	MDL
1. C						___	
2. K					___		___
3. B		___					
4. J			___				
5. D						___	___
6. H		___					___
7. D				___			___
8. G						___	
9. D				___			
10. G						___	___
11. D			___				
12. H	___						___
13. B						___	
14. H					___		___
15. D						___	
16. K	___						
17. B		___					
18. K						___	___
19. B				___			
20. K				___			___
21. B						___	___
22. F						___	___
23. C						___	
24. J						___	___